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ABSTRACT

The purpose of this report is to explore academic language on a broader discourse-level of analysis. Examining three linguistic exchanges from a bilingual elementary school, the report discusses how academic tasks influence academic language discourse styles (registers) in fifth-grade class lessons. Two dominant theories are drawn from the literature: (1) that academic language is a compilation of unique language functions and structures that are difficult for language minority students to master; and (2) that in a dichotomy between academic language and conversational language, the former provides fewer contextual clues. An alternative model views academic language as register, adjusted in lexical and syntactic features according to context. The study presented here examined classroom interaction in two fifth grade bilingual classes taught in English. Three samples of classroom discussion are analyzed, each revolving around a discrete academic task. It is concluded that the academic language registers used are shaped by the particular academic tasks. A survey of 132 English-as-a-Second-Language (ESL) teachers elicited definitions, descriptions, and examples of academic language. Results indicate significant conceptual differences between teachers and the research literature concerning academic language, suggesting a need for communication between teachers and researchers on this topic, and further research. (MSE)

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RESEARCH REPORT: 15

ED 389 212

CONCEPTUALIZING ACADEMIC LANGUAGE

JEFF SOLOMON AND NANCY RHODES

U.S. DEPARTMENT OF EDUCATION
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CONCEPTUALIZING ACADEMIC LANGUAGE

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NATIONAL CENTER FOR RESEARCH ON CULTURAL DIVERSITY AND
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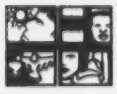

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Conceptualizing academic language

Abstract

In much of the research literature, academic language is described in discrete linguistic terms, focusing in particular on lexis and syntax. The purpose of this report is to explore academic language on a broader discourse-level of analysis. Examining three linguistic exchanges from a bilingual elementary school, the authors show how academic tasks influence academic language discourse styles (registers) in fifth grade class lessons. The authors also compare the research literature and their own classroom research with the results of a survey on academic language that they distributed to ESL educators.

INTRODUCTION

As the number of ethnic and language minority students in our nation's schools continues to grow at a steady rate, the debate about how best to serve these students has taken on a greater sense of urgency. Teachers, administrators, and researchers have been concerned with isolating variables that hinder the academic progress of ethnic and language minority student populations, then devising culturally and linguistically appropriate instructional strategies to raise their achievement levels.

There is general agreement among educators and researchers that the distinct type of English used in classrooms, referred to as *academic language*, is a variable that often hinders the academic achievement of some language minority students, even though such students might be proficient in varieties of English used in non-academic contexts (Cummins, 1981; Hamayan & Perlman, 1990; Saville-Troike, 1984, 1991; Spanos, Rhodes, Dale, & Crandall, 1988). Despite this consensus, though, there are conflicting views regarding what constitutes academic language. The purpose of this report is to 1) review perspectives on academic language found in the research literature, 2) suggest an alternative conceptualization of academic language, based on our classroom research, and 3) present teachers' views of academic language to show how they compare to our research findings and the views in the research literature. By reconceptualizing academic language, we hope to provide educators with an analytic tool for understanding the role of language in classrooms with students from diverse language backgrounds.

RESEARCH LITERATURE ON ACADEMIC LANGUAGE

Two distinct hypotheses dominate the relatively small body of research literature on academic language. The first proposes that academic language is a compilation of unique language functions and structures that are difficult for language minority students to master (Hamayan & Perlman, 1990). O'Malley (1992) and Valdez Pierce and O'Malley (1991) hypothesize, for example, that a handful of academic language functions are characteristic of classrooms in general: seeking information, informing, analyzing, comparing, classifying, predicting, hypothesizing, justifying, persuading, solving problems, synthesizing, and evaluating.

Spanos et al. (1988) apply this perspective on academic language to mathematics. Basing their findings on simulated mathematics problem-solving sessions among community college students in algebra classes, Spanos and his colleagues argue that syntactic features, such as comparatives (greater than/less than), logical connectors (if . . . then, given that), reliance on the passive voice, and various uses of prepositions are particular to the language used in mathematics classes. They also identify several semantic features of mathematics language: technical vocabulary (e.g., additive inverse, coefficient), ordinary vocabulary that has different meanings in math, (e.g., square, power) complex strings of words (e.g., least common denominator, negative exponent), synonymous words and phrases (e.g., add, plus, and combine), and various mathematical symbols and notations (Spanos et al., 1988).

The National Science Teachers Association (1991) and Chamot and O'Malley (1986) describe the functions of scientific academic language as formulating hypotheses, proposing alternative solutions, describing, classifying, using time and spacial relations, inferring, interpreting data, predicting, generalizing, and communicating findings. Chamot and O'Malley further note that science utilizes certain non-technical terms that have unique meanings in a scientific context (e.g., table, energy), and that scientific discourse is characterized by a particular sequence of steps and a heavy reliance on the use of the passive voice and long noun phrases. Lemke (1990) also notes a preference for the passive voice in science.

Halliday (1989) suggests that science uses the following academic language features: interlocking definitions, technical taxonomies, special expressions, lexical density, syntactic ambiguity,

grammatical metaphor, and semantic discontinuity. These features, Halliday stresses, do not occur in isolation; rather, they overlap with one another, particularly in text passages.

Short (1994) notes that students must be able to use the following language functions effectively in American history classes: explaining, describing, defining, justifying, giving examples, sequencing, comparing, and evaluating. According to Short, history texts employ a variety of syntax types, including simple past, historical present, sequence words, active voice, temporal signals, and causative signals. She points out that, although these language functions are not exclusive to American history, they do play an important rôle in the language learning and content comprehension of students.

Coelho (1982) discusses the functions of the academic language of social studies by subject area. For example, history often uses time-specific language, signalling of cause and effect, hypothesizing, generalizing, comparing and contrasting, and adopting specialized vocabulary. Chamot and O'Malley (1986) also discuss the following features of the academic language of social studies that might be difficult for language minority students to learn: the use of unfamiliar political/cultural concepts (such as democracy), an expository discourse style, and textbook sentences with multiple embeddings.

In the second hypothesis dominating academic language research, advanced by Cummins (1981), scholars attempt to distinguish *academic language* (which Cummins called Cognitive Academic Language Proficiency, or CALP) from *conversational language* (which Cummins called Basic Interpersonal Communicative Skills, or BICS) in terms of the "contextual support available for expressing or receiving meaning" (Cummins, 1981, p. 11). Cummins and those who have built upon his model (Chamot & O'Malley, 1986, 1987; Collier, 1987; Hamayan & Perlman, 1990; Mohan, 1986, 1989; O'Malley, 1992; Saville-Troike, 1984, 1991; Schleppegrell & Christian 1986; Spanos et al., 1988; Valdez Pierce & O'Malley, 1992) argue that BICS are more context-embedded in nature than academic language. That is, in BICS, meaning is obtained among those communicating through the aid of various situational and paralinguistic cues. This means that students do not have to rely exclusively on language in order to comprehend meaning; students draw on a variety of cues, such as body language, speech intonation, and sequence of events, to understand language.

In contrast, these scholars claim, academic language is context-reduced in nature, meaning that students do not have an abundance of situational and paralinguistic cues at their disposal to obtain meaning (Cummins, 1981). This means that students must rely, in the most extreme cases, solely on verbal and spoken language for comprehension. The degree to which academic language is context reduced varies, however, according to the situation. A classroom discussion, Cummins argues, will be marked by a fair amount of situational cues, whereas a textbook passage requires that readers base their understanding solely on the actual words they read (1981).

Cummins further distinguishes academic language according to its cognitive demands. As he explains, the less automatized a language task is, the more cognitively demanding it is (1981). For example, "persuading other individuals that your point of view rather than theirs is correct, or writing an essay on a complex theme" (1981, p. 13) would be a cognitively demanding task. Academic language is most difficult for language minority students, then, when they are required to carry out cognitively demanding tasks in context-reduced situations.

Our research, as we will discuss in greater detail later, builds upon the literature on academic language in two respects. First, we emphasize the relationship between language and academic tasks. Second, through detailed transcripts of actual classroom lessons, we show how students and teachers use academic language to accomplish academic tasks.

RELATED RESEARCH PERSPECTIVES: CLASSROOM DISCOURSE ANALYSIS

Although research on classroom discourse has been concerned with turn-taking and participation patterns, rather than describing the features of academic language, it is important to review this body of research literature because of its relevance to our research project. Mehan (1979) pioneered research in the field by demonstrating that classroom lessons are not arbitrarily structured, but are governed by unique interactional sequences he calls the Initiation-Reply-Evaluation (IRE) pattern. The initiation phase of IRE refers to a communicative act on the part of the teacher, usually in the form of a verbalized question, that sets the discourse structure in motion. Teacher questions can be addressed to individual students, groups of students, or the class as a whole. The second phase of the sequence is comprised of a reply to the teacher's initiation by a student or group of students. In the evaluation phase of IRE the teacher indicates to the students whether the reply phase is "right" or "wrong."

Mehan provides the following examples from his research to illustrate basic IRE interactional sequences (1979, pp. 52-53).

Initiation	Reply	Evaluation
T: And whose is this?	Many: Veronica	T: Oh, a lot of people knew that one.
T: Um, whose name is this?	L: Mercedes	T: Mercedes, right.
T: Now who knows what this one says (holds up new card)? This is the long word. Who knows what this says?	A: Cafeteria.	T: Cafeteria, Audrey, good for you.
T: Um, why do you why do you think that would be better than each child carrying his own?	J: 'Cause that's ah that's a job for them.	T: Yes, it would be a job.

Note that in each case the teacher begins the interactional sequence with a question. A student then offers a reply. In the third and final phase of the sequence, the teacher evaluates the students' responses, thereby bringing to a close the IRE structure. While Mehan does state that there are more complex variations on the IRE structure, he notes that it is important to remember that the majority of classroom interactions are constrained by the IRE sequence.

Since Mehan's study, other scholars have advanced research in this area by suggesting that there is a relationship between various classroom discourse structures and the academic outcomes of language minority children (Au, 1980; Cazden, 1988; Macias, 1990; Michaels & Collins, 1984; McCollum, 1989; Mohatt & Erickson, 1981; Philips, 1983; Ripich & Spinelli, 1985; Tattershell & Creaghead, 1985; Trueba & Delgado-Gaitan, 1988). In what scholars have come to view as a classic ethnography in this vein, Philips (1983) explores the negative effects of mainstream classroom participation structures on the academic achievement of Warm Springs Indians in Oregon. Philips refers to the following data to demonstrate that Warm Springs Indians are less successful than Anglo students in responding

effectively to and utilizing the mainstream communicative patterns of the first- and sixth-grade classrooms in her study. Warm Springs Indians talk less than their Anglo peers during official classroom discourse structures; teachers negatively evaluate Warm Springs Indians with greater frequency than they do Anglo students; Warm Springs Indians question the meaning of teacher instructions with greater frequency; Warm Springs Indians are "reprimanded more often than non-Indian students for not paying attention" (p. 100); Warm Springs Indians appear not to listen as attentively to teachers as their Anglo peers; and "Indian students generally make less effort than Anglo students to get the floor in classroom interaction" (p. 108).

Such disparities between Warm Springs Indian and Anglo students, Philips argues, can be traced to culturally incompatible styles of communication. As Philips notes (1983, p. 115):

> For the Indian students, getting the floor in classroom encounters regulated in Anglo fashion requires them to behave in ways that run counter to expectations of socially appropriate behavior in the Warm Springs Indian community.

Warm Springs Indians, Philips points out, are socialized with the notions that "address by a speaker is more often general, rather than focused on a particular individual"; "an Indian response to what a speaker has said is not always necessary"; and "Indian speakers control the ends of their own turns" at talk (1983, p. 115). Anglo communication, Philips argues, is based on the notion that speakers exercise greater control "over the turns of others" (1983, p. 115). This Anglo ideal, embodied in a teacher who systematically determines who will speak and when, conflicts with most of the fundamental tenets of Warm Springs communicative conventions. The manifestation of such a conflict, Philips states, is the relatively high academic failure rate of Warm Springs students.

In a more recent study, McCollum (1989) compared the lesson structures in third-grade classrooms in Puerto Rico and Chicago. The IRE structure of the Puerto Rican classroom, she points out, is much more fluid and open-ended than the IRE of the Chicago classroom. That is, although the Puerto Rican classroom is characterized by the initiation-reply-evaluation sequence, there is much more informal give-and-take between students and teacher than there is in the Chicago classroom. This, according to McCollum, explains why Puerto Rican students have difficulties adapting to the IRE discourse structure of the Chicago school. She argues that educators should take native discourse structures into account when dealing with students from cultures that use more fluid IRE sequences.

As our review of some of the classroom discourse literature indicates, researchers have demonstrated that certain interaction patterns can limit the participation of language minority students in mainstream classrooms. The strength of this research is its use of linguistic data from actual classroom lessons to support researchers' claims. What is needed to further understand language use in classrooms, however, is study of the *quality* or *nature* of the language that students must use to be deemed successful by teachers and administrators. As Gumperz suggests, it is important to focus on "contextualization-based, on-line, discourse-level inferencing rather than just concentrating on regularities of sequential organization across speech exchanges" (1992, p. 231). We will follow Gumperz's suggestion and focus on a variety of discourse features, rather than limiting our analysis to isolated instances of IRE sequences, when we discuss our research findings later in this report.

AN ALTERNATIVE CONCEPTUALIZATION OF ACADEMIC LANGUAGE

The sociolinguistic concept that frames much of the literature on academic language that we have discussed is *register.* Halliday introduced the concept of register to account for "a variety of a language distinguished according to use," rather than one tied closely to the user (the latter traditionally referred to as *dialect*) (1978, p. 87). Simply stated, register

refers to the notion that "the language we speak or write varies according to the type of situation". (Halliday, 1978, p. 31-32). According to Halliday (1978), gaining insight into the properties of a particular register involves exploring what is taking place, who is taking part, and what part language is playing.

In Halliday's model, registers are distinct from one another according to lexical and syntactic features. That is, different contexts call for different lexical and syntactic items. Halliday states:

> The crucial criteria of any given register are to be found in its grammar and its lexis. Probably lexical features are the most obvious. Some lexical items suffice almost by themselves to identify a certain register: "cleanse" puts us in the language of advertising, "probe" of newspapers, especially headlines, "tablespoon" of recipes or prescriptions, "neckline" of fashion reporting or dressmaking instructions. (1978, p. 88)

Although Halliday's model is important because it focuses on relationships between context and language, data we collected from two classrooms suggest that academic language is not distinguished solely by lexis, syntax, or various other discrete linguistic features. As we show below, the teachers in our study imply that their students are to use particular styles of language to accomplish various academic tasks. These styles of language, which we will refer to as *stylistic registers*, are associated with broad, discourse levels of language, rather than discrete, sentence-level linguistic features, as Halliday's theory asserts.

Various other sociolinguistic concepts, such as speech event, code, and linguistic variety, refer to broad, discourse levels of language. Unlike stylistic register, however, these concepts generally are not conditioned by predictable contextual factors. The advantage of viewing academic language in terms of stylistic registers is that one can assume that various academic tasks (contextual factors) influence the style of language to be used.

Research Findings

The data discussed below were collected from two fifth grade classes in a public bilingual school in Washington, DC during the 1993-1994 school year. All of the lessons tape recorded were taught in English. The two teachers are Ms. Alvarado,[1] who taught a pull-out ESL (English as a second language) class, and Mr. Fuentes, who taught a social studies class.

Example One

We examine first a stylistic register of academic language that we call "story retelling." Story retelling is characterized by the teacher's insistence that students retell a story they have read in precise chronological order. As our transcript below shows, the teacher encourages students to use a specific style of language to accomplish the academic task at hand.

Acquiring this skill can be difficult for language minority students who are not accustomed to discussing written material in such a manner. The difficulty was compounded for the language minority students in the lesson in the transcript, because the teacher was not explicit about her academic language requirements at the onset.

In the example below, Ms. Alvarado asks a male Spanish-speaking student, K, to retell the beginning of a story that the class had read, *The Invisible Hunters* (Rhomer, Chow, & Vidaure, 1987). Confusion arises, however, when K interprets "beginning" as the beginning *portion* of the story, rather than the literal beginning of the events.

T = Teacher
S = Student
S* = More than one student
/?/ = Inaudible
. . = Teacher pause for student response
. . . = Pause
— = Interrupted speech

1 T: Ok, before we start reading, who can raise their
2 hand and tell us what has happened in the story so
3 far? What happened in the story so far? Tell us the
4 story. Imagine that I don't know that story. Tell me
5 the story so far, part of it. K, what happens at the
6 beginning of the story?
7 K: Um, /?/ found his friend?

8 T: Ok, good. But can you start by saying—
9 K: I mean, he heard a voice saying, "Dar, Dar, D..r"
10 [character's name].
11 T: Ok, good. Can you go back even further? Can you tell us—
12 K: They were hunting for—
13 T: Ok, they were—
14 S*: Wari [type of animal in story].
15 T: Hold on. Who was hunting?
16 K: Three brothers.
17 T: Ok, three brothers were . . hunting.

Ms. Alvarado indicates to K that he is not using the correct stylistic register of academic language (line 8) by negatively evaluating his response ("Can you start by saying"), but K interrupts her in the next line in an attempt to correct himself. His second response also proves to be an unsatisfactory starting point for retelling the story, as the teacher indicates in a more explicit manner: "Can you go back even further?" (line 11). K interrupts Ms. Alvarado once again, but this time mentions part of what she considers to be the appropriate stylistic register of academic language, the actual beginning of the story ("They were hunting"). In the remainder of the segment, Ms. Alvarado probes for more information concerning K's response ("Who was hunting?") and uses K's answer, plus the first bit of information he provides ("They were hunting"), to model a sentence that reflects an appropriate chronological retelling of the beginning of the story ("Ok, three brothers were . . hunting").

Several interpretations of this interaction are possible. Observers who do not focus on academic language as an important classroom activity might conclude that K has a problem with reading comprehension, resulting perhaps from some sort of cognitive deficit, because he cannot correctly answer what appears to be a straightforward and simple question. When viewed from a sociolinguistic perspective, however, it becomes clear that K might not be familiar with the academic language requirements for chronological story retelling. Perhaps he needs explicit instruction regarding chronological story retelling, as well as repeated exposure to it, in order to gain proficiency in this stylistic register of academic language.

Example Two

In this example, the academic task involves responding to a pen pal letter. Therefore, the register in the exchange below between Ms. Alvarado and R, a Latino student, is specific to the task of letter writing. Ms. Alvarado, noticing that R has mistakenly written reponses to a pen pal letter on the actual letter instead of on a clean sheet of paper, and that he has written in incomplete sentences, works one-on-one with him to formulate correct responses. As the transcript begins, Ms. Alvarado reads a question from the pen pal's letter, then engages in a discussion with R about appropriate ways to respond.

1 T: Alright, let's see what else. "Do you have pets at
2 home?" And you wrote what?
3 R: "Yes, a /?/."
4 T: Yes.
5 R: A monkey/?/.
6 T: Ok, why don't you explain that to her?
7 R: I said, "Yes, a /?/."
8 T: So what sentence are you going to write?
9 R: "Yes, I do"?
10 T: "I do" what?
11 R: "I do have" . . .
12 T: Have . . have what?
13 R: A dog.
14 T: Ok, you can tell her that . . . (R writes sentence.) "I
15 have a dog in /?/." What goes at the end? Ok, now
16 you said you have a dog and two cats, and then you
17 put "no dog." Do you know why you put that?
18 R: /?/
19 T: Alright, the important thing is that you understand
20 that when you're writing back to your pen pal you
21 have to answer the questions in your letter, right?
22 Because this letter is for you. You are going to keep
23 this letter. So if you write the answers on her letter,
24 she will never know the answers. Right? You have
25 to write them on your letter. Ok, what I'd like you to
26 do now, then, is go to your final copy.

In line 6, Ms. Alvarado suggests that R's response to the question of whether he has pets is not the appropriate academic language register, because it is not explicit enough ("Ok, why don't you explain that to her?"). In line 7, R attempts to clarify his initial response by repeating it to Ms. Alvarado, but she continues to suggest that he is not using the correct register of academic language by implying that his response must be in the form of a complete sentence ("So what sentence are you going to write?").

R attempts on three more occasions (lines 9, 11, and 13) to respond to Ms. Alvarado's question, but in each case Ms. Alvarado notes that his responses are not explicit enough: "'I do' what?" (line 10) and "Have . . have what?" (line 12). In line 14, Ms. Alvarado suggests that R should compile the information, which until this point he had related to her in piecemeal fashion, into one complete sentence: "Ok, you can tell [write] her that." At the end of the transcript (lines 19-26), Ms. Alvarado summarizes the purpose of her interaction with R by suggesting that writing his responses on a fresh sheet of paper requires a shift to a particular style of language: explicit, full-length sentences, rather than the one-word responses he had written on the original pen pal letter.

As in the first example we discussed, the interaction between Ms. Alvarado and R suggests that he does not have difficulty comprehending his pen pal's letter, but, instead, is not accustomed to the particular style of language needed to respond to letters.

Example Three

In this final example, the academic task is a discussion of a filmstrip from a critical perspective, that is, "reading between the lines" of the superficial content of the filmstrip. Mr. Fuentes tries to get his students to adopt a register of language that we refer to as critical discourse. The filmstrip was about the lifestyles of native peoples in regions of northern Canada and the Arctic. As the transcript begins, Mr. Fuentes explains his reaction to the filmstrip, then poses a question to the class.

1 T: Now, the narrator, in my opinion, painted this thing
2 a little bit more neutrally than I believe a lot of this
3 stuff really happens. When he begins to say that
4 many people now choose to live in settlements [oil
5 company sponsored residential areas for
6 employess; the settlements are cramped and lower
7 class in appearance] in cities, and many of these
8 traditional ways were sort of, oh, they're not lost,
9 and they're not forgotten, and they weren't lost and
10 forgotten on purpose. A lot of these traditions are
11 still maintained because many times these are the
12 few opportunities that they get to practice their
13 traditional sort of cultural traditions and practices. A
14 lot of these people who have actually begun to live
15 in settlements like this, can anybody sort of give me an
16 idea why many people have chosen to do this? Ms. R?
17 R: It's easier to live /?/.
18 T: Ok, it's easier to live like this [than in indigenous
19 housing]. M?
20 M: Some people like don't like crowded areas, and a
21 lot of people don't want to live there. Well some
22 people don't, a lot of people don't live there.
23 T: A lot of people live where?
24 M: In . . .
25 T: In these communities?
26 M: Yeah.
27 T: Ok. Ok, those are good reasons. Other ones? Mr. L?
28 L: They want their kids to get an education so they can
29 work?
30 T: Ok, they want their kids to get an education so they
31 want to work. Anybody else?

(A few minutes later in the lesson)

32 E: Because everything's in the way, like cars.
33 T: Everything's in the way, like cars. How did cars get
34 in their way?
35 E: No, like when their ancestors lived there were no
36 cars, so it was, like, easier for them without having
37 to ask the government if they could /?/—
38 T: Ah, good point. They have to ask the government
39 for permission to fish and hunt and all those things?
40 Alright, and I think Mr. E. is pretty close to what's
41 been going on for the last several hundred years.
42 This gentleman [oil worker in film strip], he works on
43 the oil rigs. Now these oil rigs, these companies are
44 owned by, these oil companies are owned by big,
45 big, big, huge corporations that go into the land and
46 they pull the oil out. You heard what the gentleman
47 [the narrator] said, well some of the agreements
48 that have been made with the people [natives]
49 haven't always been fair. Mr. E?
50 E: Well they like take advantage of them?
51 T: Sure. Why do they take advantage of them? Mr. L?
52 L: Because they, like, they don't know what money
53 was?
54 T: At one time they didn't know what money was. But,
55 go on.
56 L: They've never been in that kind of environment?
57 T: Yeah, they were never in that type of environment,
58 correct.

In the beginning portion of the transcript (lines 1-16), Mr. Fuentes models a critical discourse register for his students by noting that "the narrator, in my opinion, painted this thing a little bit more neutrally than I believe a lot of this stuff really happens." He then goes on to question the filmstrip's portrayal of the integrity and maintainence of various native

cultural traditions. Mr. Fuentes concludes his opening statement by posing a question to the class about why many native peoples live in oil-company-sponsored housing.

In lines 17-31, several students offer responses to his question. Mr. Fuentes uses an interesting technique to indicate to his students that they are not using an appropriate stylistic register without discouraging additional students from offering their ideas. Note that Mr. Fuentes repeats each student's response but does not explicitly evaluate its content. Instead, he suggests that the response is not appropriate by continuing to elicit responses from other students.

The pattern shifts, however, when Mr. Fuentes, in response to an idea offered by E (line 32), asks him to elaborate on his comment. This suggests that E has begun to use language in the style Mr. Fuentes desires, because he does not simply repeat E's utterance and move on to another student.

E further elaborates on his point in lines 35-37, to which Mr. Fuentes responds, "Ah, good point" (line 38), indicating that E has approximated the stylistic register the teacher had been looking for. Mr. Fuentes then uses E's comments as the basis to advance the critical discourse of the lesson further by discussing the value of the oil company's practice of digging on native land (lines 38-49).

Mr. Fuentes' expansion of the critical discourse register spurs E to use the critical discourse register more boldly in line 50 when he offers the idea that "they like take advantage of them?" In the remainder of the transcript, Mr. Fuentes indicates that his students are getting the hang of using a critical discourse register by providing explicit positive evaluations of their comments, as opposed to neutral evaluations, as he did at the beginning of the transcript when the students were having difficulty adjusting to the register to complete the task.

As the three examples that we have examined reveal, academic language registers are shaped by the particular academic task at hand. Although lexis and syntax might distinguish some types of language use in classrooms, our data suggest that this is not the case for the lessons we have examined. In our three examples, the teachers shape the specific styles of language they think are required of the students for the academic tasks at hand.

TEACHERS' PERSPECTIVES OF ACADEMIC LANGUAGE

To determine how teachers' perceptions of academic language compare with the views we outlined in the research literature and in the findings from our analysis of classroom transcripts, we conducted a survey of over 300 ESL educators across the United States.[2] The survey consisted of eight open-ended questions that asked educators to define and describe academic language, give examples of students who use it proficiently in speaking and writing, discuss the problems some students have with it, and provide examples of how best to assess it.

The teachers who responded to our survey expressed a wide range of views regarding academic language. Of the 150 teachers who returned the survey, 132 were able to offer specific examples of what they considered academic language. Many of the respondents viewed academic language in terms of discrete aspects of language, such as vocabulary, lexis, and syntax, which coincides with some of the perspectives in the research literature, such as those expressed by Chamot and O'Malley (1986), Coelho (1982), Short (1994), and Spanos et al. (1988). The following are some examples of teachers' descriptions of specific aspects of academic language that they encourage students to use in their elementary school classrooms:

- I taught present tense third person singular "s" endings; students responded orally and in writing. Students learned short answers with *does, do, doesn't,* and *don't.*
- Math: greater than, less than, plus, minus, equals. Social studies: direction words—north, northeast, east, southeast, south, southwest, west, northwest.

- Lesson on sentence parts—we used the terms *subject* and *predicate*. We read two similar stories and I explained the meaning of *version*.
- What is a noun? What is a verb? Find the organizational structure of the reading. How many paragraphs give the background?
- Lesson: learning the three branches of government. Academic language: *executive, legislative, judicial.*
- I made a list of terms used in space. *Solar system, planets*, etc. We had a test on it. I wrote a story with blanks. They filled them in. We also have studied about the inside of the earth—*inner core, outer core, mantle, crust magma, mountains, explosion, lava.*
- Sentence and paragraph construction. Capitalization and punctuation. Vocabulary development.
- I teach social studies, words like *label, compare* and *summarize* are often used in a lesson.
- Scientific language: in the science lessons there are a variety of terms needed for the mastery of that subject. Historical language: providing the instruction of past events in the history class.
- Water is a liquid. Ice is a solid. Water freezes at 32 degrees F or at 0 degrees C. What strategy or strategies did you use to figure out this word?

Note that in these examples, the teachers focus on discrete aspects of language that the students need for a particular lesson. The teachers view academic language from a practical perspective—the language students need to understand the lesson or unit being studied. The teachers at this point make little reference to broader levels of language use, such as those we identified in our transcript analysis of how students and teachers use various styles of language to accomplish academic tasks. Instead, the focus is on discrete aspects of language.

Many of the educators we surveyed also viewed academic language in terms of language functions, which coincides with much of the research literature discussed earlier (e.g., Hamayan & Perlman, 1990; Short, 1994; Valdez Pierce & O'Malley, 1992). Educators listed functions such as comparing and contrasting (e.g., to show similarities and differences between two stories), categorizing, sequencing events, and using reading strategies such as "visualization, summarization, prediction, global understanding, characters, motivation, conflict, resolution, etc." A K-5 teacher in a pull-out content-based ESL program gave an example of academic language in a first grade lesson that includes carving a pumpkin. Students dictated a language experience story about the activity and used sequencing words such as first, next, then, and finally. An example from second grade was a lesson on animal characteristics, using comparison and contrast in sentences such as "Owls have feathers but cats have fur. Owls have bones and cats have bones too."

Other definitions and examples of academic language offered by respondents to our survey included such statements as: "Academic language is formal language used in formal writing, instruction by teachers, etc. It's not usually used on social occasions between friends." An ESL (K-12) teacher focused on the cultural aspects of language: "Academic language is the accumulation of language that has built up as the result of being schooled in a particular culture. It is required for the building of a frame of reference of social, political, and economic issues." Finally, one K-12 ESL program coordinator emphasized that this type of language can only be acquired at school. "Academic language is the language of lecture and of textbooks. It is filled with expectations of prior knowledge and background and cultural uniformity. The vocabulary can be very technical and is topic-specific."

A few teachers did question the validity of the construct of academic language. A university ESL teacher trainer stated that "I believe [academic language] is a bogus concept. The teachers decide the type of language needed to survive their classrooms—not a label." Other teachers, including a K-6 ESL pull-out teacher who uses whole language instruction, felt that the term applied mostly to written language, as illustrated in math word problems. She stated that written word problems "give my students great difficulties, i.e., 'if the length of the garden is 6 feet and the width is four feet, what is the total area?' Words such as 'take away,' 'combined,' 'all together,' etc. [are especially hard]." In general, though, the teachers had strong views of what academic language is in the classroom and expressed a wide range of views covering both oral and written language.

Cognitive development is the focus of a K-5 ESL pull-out teacher's whole language activities for academic language development. She writes:

> In comparing a previously read book with our present one by the same author, the students are learning how to complete a story map, to answer WH questions, and to write answers succinctly, in a list form when possible. From the story map they will try to predict possible similarities in the next story, will eventually write their own versions of the story, will complete a BIG BOOK, and will use a Venn diagram to note similarities and differences. All the activities will stimulate higher cognitive thinking and will familiarize the students with the story maps and Venn diagrams in their mainstream classes.

Like many other teachers surveyed, this teacher incorporated a variety of integrated techniques to accomplish the language and academic content objectives of her curriculum.

The practical concerns of the teachers suggest that researchers can make their work relevant to educators by analyzing classrooom discourse to help develop methods for improving the educational experiences of language minority students, rather than focusing on more removed theoretical issues. It is interesting to note, for example, that none of the educators who responded to our survey described academic language in terms of the context-reduced/ embedded model described by Cummins (1981) and his associates in the research literature. One reason for this could be that the respondents were more concerned with immediate practical issues, rather than general models.

CONCLUSION

As we have shown in this report, there are significant conceptual differences concerning academic language between teachers and certain aspects of the research literature, on the one hand, and between our research and both the research literature and teachers, on the other hand. This suggests that work must continue on a number of levels before greater consensus about academic language can emerge among those concerned with defining and understanding it.

One approach that teachers and researchers can take to arrive at greater understandings of their respective views of academic language is not only to share their ideas regularly but to explain to one another the overarching educational and linguistic paradigms that guide their views. Tapping into one another's paradigms will enable teachers and researchers to understand the logic that underlies their respective views. Such exchanges of information might result in the awareness that teachers and researchers have different assumptions about the nature of education and language.

Perhaps one of the easiest ways for teachers and researchers to share information on current research paradigms and classroom practices is through in-service sessions or seminars led by researchers and experienced teachers. Such forums would help to ensure that teachers are aware of research paradigms, while at the same time ensuring that researchers are aware of teachers' strategies and techniques for teaching academic language.

In the end, research on academic language must take into account the concerns of teachers by basing findings on the examination of actual classroom lessons over an extended period of time. Such research will most likely be of the greatest use to teachers when it is empirically based: that is, when researchers can demonstrate their points with actual data from classroom transcripts.

It is significant that, although many of the educators we surveyed agreed there is something distinct about academic language, none of them viewed academic language from a sociolinguistic perspective, as we did in our research. While reasons for this are not clear, we hope that our use of transcripts from actual classroom lessons to demonstrate how registers are used makes a positive contribution to teachers' thinking about the role of language in their classrooms.

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NOTES

1 In order to maintain teachers' anonymity, we use pseudonyms in this paper.

2 We sent surveys to the following groups of educators: a subsection of the elementary Special Interest Group of Teachers of English to Speakers of Other Languages; attendees of the June 1994 National Center for Research on Cultural Diversity and Second Language Learning Institute in Storrs, CT; the ESL teachers of Montgomery County, MD; teachers and students in the ESL graduate program at California State University/ Los Angeles; students in the ESL/multicultural education graduate program at George Mason University, Fairfax, Virginia; and ESL educators at the University of North Carolina-Charlotte. The majority of the respondents were elementary ESL teachers, with the rest including middle and high school ESL teachers, ESL teacher trainers, administrators, and graduate students in training to become ESL teachers.

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